Claims

1. A method for *ex vivo* diagnosis of MHC class II haplotype specific immune responses to H-RSV antigens in a subject, wherein the method comprises the steps of:

(a) determining the MHC class II haplotype of the subject;

(b) providing a composition comprising peripheral blood mononuclear cells (PBMC's) from the subject;

(c) mixing the composition comprising PBMC's with a peptide comprising an amino acid sequence selected from Table 1 that matches the MHC class II haplotype of the subject in accordance with Table 1; and,

(d) determining the proliferation of the PBMC's.

2. A method according to claim 1, wherein in step (d) the proliferation of T cells is determined.

3. A method according to claim 2, wherein the proliferation of T cells is determined without pre-expansion of the T cells.

4. A method according to claims 2 or 3, wherein the proliferation of $CD4^+$ T cells is determined.

5. A method according to claim 4, wherein the proliferation of $CD4^+$ T cells is determined by measuring IFN-γ production.

6. A method according to claim 5, wherein IFN-γ production is measured in a (direct) elispot assay.

7. A method according to any one of claims 1 - 6, wherein in step (c) the peptide is mixed with the preparation of PBMC's at a concentration of a least 5 nM.

8. A method according to any one of claims 1 - 7, wherein the immune responses to H-RSV antigens is determined in a subject undergoing or having undergone an infection with H-RSV.

9. A method according to any one of claims 1 - 7, wherein the immune responses to H-RSV antigens is determined in a subject vaccinated against RSV.

10. Use of a method according to claim 1 - 7, to evaluate correlates of protection in vaccinated individuals.

11. A method for MHC class II haplotype specific vaccination of a subject against H-RSV, the method comprising the steps of:

(a) determining the MHC class II haplotype of the subject; and,

(b) administering to the subject a pharmaceutical composition comprising a peptide comprising an amino acid sequence selected from Table 1, whereby the amino acid sequence matches the MHC class II haplotype of the subject in accordance with Table 1.

12. A method according to claim 11, wherein the pharmaceutical composition is suitable for parenteral administration and is administered parenterally, or wherein the pharmaceutical composition is suitable for transdermal administration and is administered transdermally.

13. Use of a peptide comprising an amino acid sequence selected from Table 1, for the manufacture of a vaccine for MHC class II haplotype specific prophylaxis or therapy of H-RSV infection in a subject, whereby the amino acid sequence matches the MHC class II haplotype of the subject in accordance with Table 1.

14. A use according to claim 13 wherein the vaccine is a pharmaceutical composition suitable for parenteral or transdermal administration.